

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Offic**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	D	ATTORNEY DOCKET NO	12
087786,988	01/23/97	LITTLE			

IM41/0317

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 LE, I EXAMINER ART UNIT PAPER NUMBER

03/17/99

DATE MAILED:

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No. <b>08/786,988</b>	Applicant(s) <b>Little et al.</b>
	Examiner <b>Long V. Le</b>	Group Art Unit <b>1743</b>

Responsive to communication(s) filed on Dec 28, 1998

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire THREE month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

Claim(s) 1-90 is/are pending in the application.

Of the above, claim(s) 36-39 is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-35 and 40-90 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims 36-39 are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 10, 11

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election of group I, claims 1-35 and 40-90 in Paper No. 12 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Claim Rejections - 35 USC § 112*

2. Claims 25-30<sup>and 73-79</sup> are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25, "without contacting the surface with the vesicle" is vague and indefinite and lacks antecedent basis as to what surface it refers.

Line 3, "a" (third occurrence) should be deleted.

Claim 73, "the solvent" lacks antecedent basis. Same deficiency is found in claim 76, 79.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

4. Claims 70, 71, 76, 79, 80 and 84-86 rejected under 35 U.S.C. 102(e) as being anticipated by Ershow et al. (USP 5,756,050).

Ershow et al. anticipate the instant claims by teaching a method for dispensing nanoliter volumes of a material on the surface of a substrate 16 comprising the steps of providing a pin assembly 1 having a plurality of elongated vesicles 2 arranged as an array for dispensing a liquid therefrom (figures 1 and 2), wherein each vesicle comprises a solid shaft of material having an end for retaining a nanoliter volume of fluid; loading a volume of fluid from a fluid source 14 onto the end of the vesicles; disposing the pin assembly to align the vesicles at a first set of locations adjacent to the surface of the substrate 16; and contacting the loading fluid to the surface of the substrate aligned with the vesicles, whereby an array of material on the surface of the substrate is formed (figures 3-4).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

7. Claims 1-35, 40-69, and 87-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tisone (USP 5,743,960) in view of Patterson (USP 5,869,240).

Tisone discloses a method and an apparatus for dispensing a material on a substrate substantially as claimed. The method comprises the steps of providing a vesicle 12 having an interior chamber containing a fluid, disposing the vesicle 12 adjacent a first location on the surface of a substrate 30, controlling the vesicle to eject from the chamber a nanoliter volume of the fluid to dispense the fluid at the first location of the surface of the substrate, and moving the vesicle to a set of positions so that fluid is dispensed from the vesicle at each location of the set for forming an array of fluid material (figures 1, 6 and 7). Note that Tisone teaches in one of embodiments that the method can be used to dispense sample fluids onto a diagnostic test strip for testing (column 11, lines 14-25). Tisone does not specifically recite the step of performing mass spectrometry analysis for the material. However, such an analysis step on a substrate using a mass spectrometer is considered conventional in the art, see Patterson. Patterson teaches a method for sequencing polymers using a mass spectrometer in order to provide a rapid, automated and cost effective sequencing of polymers with a statistical certainty (Background and Summary of the Invention sections).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the method and the apparatus of Tisone et al. with a spectrometer, as taught by Patterson, in order to provide a rapid, automated and cost effective sequencing of polymers with a statistical certainty.

8. Claims 72-75, 77, 78 and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ershow et al. (USP 5,756,050) in view of Patterson (USP 5,869,240).

Ershow et al. reference has been discussed above which fails to specifically recite a diagnostic tool comprising of a mass spectrometer. However, the use of such a

spectrometer for identifying polymers is considered conventional in the art, see Patterson (USP 5,869,240). Patterson teaches a method for sequencing polymers using a mass spectrometer in order to provide a rapid, automated and cost effective sequencing of polymers with a statistical certainty (Background and Summary of the Invention sections).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the method of Ershow et al. with a spectrometer, as taught by Patterson, in order to provide a rapid, automated and cost effective sequencing of polymers with a statistical certainty.

*Conclusion*

9. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long V. Le whose telephone number is (703) 305-3399.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



Long V. Le  
Primary Patent Examiner, Art Unit 1743  
March 8, 1999.